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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,843	07/23/2003	Volker Fraedrich	09130.0003	9278
22852 7590 11/19/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER NATALINI, JEFF WILLIAM	
			ART UNIT 2858	PAPER NUMBER
			MAIL DATE 11/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/626,843

Applicant(s)

FRAEDRICH, VOLKER

Examiner

Jeff Natalini

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 15-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/4/07 has been entered.

Claim Objections

2. Claims 1, 3, and 30 are objected to because of the following informalities:

In regard to claims 1 and 30, in the amended part of the claims stating "amplifying signals from the first antenna coil and the second antenna coil ..." there is no antecedent basis for "the first and second antenna coils" and 'the' should be replaced with 'a'.

In regard to claim 3, because antenna coils are introduced in claim 1, 'a first and second antenna coil' should be replaced with "the first and second antenna coil".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-7, 9-14, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) in view of Topp et al. (5574376).

In regard to claims 1, 3-5, 7, and 30, Lulham discloses a method/apparatus of locating cable faults (abstract) comprising:

means for coupling an audio frequency generator to a cable to provide a magnetic field at an audio frequency (abstract lines 5-17);

means for generating test values corresponding to the magnetic field along the cable route (col 7 line 46-57);

means for entering the test values at a plurality of test points on the cable route (col 7 line 46-53);

means for determining a degree of inhomogeneity along the cable route from the test values determined (col 1 line 60 - col 2 line 6) and displaying the degree of inhomogeneity (col 2 line 41-64 and col 3 line 33-62; also see figures 12-17 and descriptions).

Lulham lacks specifically

(claims 1, 3, 4, and 30) wherein the test values are generated corresponding to receiving at least two orthogonal components of the magnetic field at the receiver, wherein the first and second components of the magnetic field are detected with a first and second orthogonal antenna coils, wherein generating test values includes: amplifying signals from the antenna coils to produce amplified signals; filtering the

amplified signals to produce filtered signals; and digitizing the filtered signals to produce test values; entering the values of a plurality of test points along the cable and storing all values recorded in memory

(claim 5) determining a first and second gain for the amplifying signals from the antenna coil; and

(claim 7) wherein entering the test values at test points along the cable includes entering an input to a softkey/key at various points on the cable route to signify a test point, and storing the test values in memory upon activation of the softkey/key (claim 7).

Topp et al. discloses wherein

(claims 1, 3, 4, and 30) wherein the test values are generated corresponding to receiving at least two orthogonal components of the magnetic field at the receiver (col 1 line 55-64, see also col 4 line 52-64), wherein the first and second components of the magnetic field are detected with a first and second orthogonal antenna coils (col 1 line 55-64, see also col 4 line 52-64), wherein generating test values includes: amplifying signals from the antenna coils to produce amplified signals (col 3 line 46-48); filtering the amplified signals to produce filtered signals (col 3 line 50-52); and digitizing the filtered signals to produce test values (col 3 line 55-56); entering the values of a plurality of test points along the cable (col 4 line 38-44; see figure 2c) and storing all values recorded in memory (col 3 line 62-64)

(claim 5) determining a first and second gain for the amplifying signals from the antenna coil (col 3 line 55); and

(claim 7) wherein entering the test values at test points along the cable includes entering an input to a softkey/key at various points on the cable route to signify a test point, and storing the test values in memory upon activation of the softkey (col 3 line 53-61).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham to incorporate determining two orthogonal values of the magnetic field with antenna coils orthogonal to each other and storing the readings, and amplifying, filtering, and digitizing the test values, wherein the test values are input at various points along the cable and activating the memory upon activating the softkey/key, as taught by Topp et al. in order to be able to inspect faults through many non-conducting coatings of the conductor (col 1 line 21-24).

In regard to claim 6, Lulham discloses filtering amplified signals with band pass filters at an audio frequency matched with an output signal of a frequency generator, the frequency generator being coupled to a cable to produce the magnetic field (col 6 line 17-26 figure 1 element 21; frequency generator is figure 1 element 19).

In regard to claims 9 and 13, Lulham discloses displaying the degree of inhomogeneity with a line trace indicated on a display of the receiver (col 2 line 41-64 and figures 12-18).

In regard to claims 10-12, Lulham as modified lacks specifically wherein the line trace of the degree of inhomogeneity discloses different coloration (claim 10), thickness (claim 11), and different patterns (claim 12).

MPEP 2144.04 IV A and B *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) states that changes in size/shape do not have patentable distinction. MPEP 2144.06, states substituting equivalents known for the same purpose (different colors) does not provide patentable distinction.

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham as modified to include in the display of inhomogeneity different discoloration, thickness, and/or patterns (shape) to provide the user with quick knowledge of where the inhomogeneity is greatest in the cable.

In regard to claim 14, Lulham discloses overlaying a geo-information cable route (unfaulted cable) display to compare with the cable route (col 4 line 20-34).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) and Topp et al. (5574376) as applied to claim 1 above, and further in view of Davis, Jr. (5539323).

Lulham as modified by Topp et al. lack specifically wherein a first pole of the audio frequency generator is connected to a central conductor of the cable, where the central connector is connected to an earth ground, and where a second pole of the generator is connected to an earth ground.

Davis, Jr. teaches wherein a cable has a central connector connected to an earth ground (col 2 line 62-65).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to have the audio frequency generator connected to one or two

poles to earth ground in order to be able to properly generate signals (generated signals all have a value based on a differential from ground), and its obvious from the teaching of Davis, Jr. to include an earth ground connected to an inner connector of a cable to provide proper shielding (col 2 line 50-65).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) and Topp et al. (5574376) as applied to claim 1 above, and further in view of Bose et al. (US Pub 20030010494).

Lulham as modified by Topp et al. discloses all that is disclosed above.

Lulham as modified lacks wherein a variation of the components of the orthogonal values are determined, and the variation is scaled to form the degree of inhomogeneity.

Bose et al. discloses wherein a variation of the components of the orthogonal values are determined, and the variation is scaled to form the degree of inhomogeneity (paragraph 9, see figures 9-14).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham as modified to determine the inhomogeneity of the values determined by determining a variation, and forming the degree of inhomogeneity from the variation as taught by Bose et al. in order to obtain a more complete characterization of the values (paragraph 8).

Response to Arguments

7. Applicant's arguments filed 9/4/07 have been fully considered but they are not persuasive. In the examiners final evaluation of the claims and the prior art, it was found that the amended part "amplifying signal from a first antenna coil and a second antenna coil to produce amplified signals; filtering the amplified signals to produce filtered signals; and digitizing the filtered signals to produce test values" which was found allowable in combination with the rest of independent claim 4, is not in fact allowable, as can be seen in the new rejection applied above. The examiner regrets that this was not applied previously.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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